



Mobile Learning to Improve Student Learning Outcomes in Tennis

Septian Raibowo^{1*}, Tono Sugihartono², Andes Permadi³, Dian Pujianto⁴

^{1,2,3,4}Department Of Physical Education, Faculty of Teacher Training and Education,
Bengkulu University. Indonesia

*Corresponding Author: Septian Raibowo, e-mail: septianraibowo@unib.ac.id

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Abstract

Studi purpose. The aim of this study was to enhance tennis learning outcomes for students in physical education.

Materials and methods. Two cycles, cycle 1 and cycle 2, of classroom action research were employed as the research methodology. This study used a collaborative planning, implementation, observation, and reflection process to enhance tennis learning outcomes. The 35 participants in this study were all seventh-semester students who attended tennis lectures. From March 2023 to May 2023, this study was carried out. The collected data was then customized as necessary and used as a source when creating a study report. The next stage for researchers was to reorganize the activity plan in order to get good results in the second cycle after gaining an overview of the issues and limitations discovered in cycle 1.

Results. The findings revealed that students' completion rates in the first cycle were 69% and in the second cycle were 94%.

Conclusions. The study's findings suggest that using mobile learning-based instruction could enhance students' tennis learning outcomes.

Keywords: Mobile Learning, Learning Outcomes, Tennis

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Introduction

To use or apply mobile learning as a new trend in learning, which creates a learning paradigm that can be done anywhere and anytime, the very high level of development of mobile devices, the relatively easy level of use, and the prices of devices that are increasingly affordable, compared to personal computer devices, are the driving factors. An alternative learning model with qualities that are independent of place and time is the idea of mobile learning (Curum & Khedo, 2021). In addition, it is anticipated that this model will be able to offer tools for knowledge sharing and visualization, making knowledge more engaging and simpler to comprehend. It is envisaged that this idea would promote the development of a new learning environment and inspire both students and teachers to study. The concept of mobile learning at the proposed higher education level is as follows: (1) The concept of mobile learning is focused on providing virtual learning classes that allow interaction between teachers and students. Interaction includes the provision of teaching materials, discussion space, delivery of assignments, and announcement of assessments, (2) the technology adopted should be

pedagogically effective and assessed as a renewal. In addition, the selected technology should be easy to access and available with an even distribution among students and teachers (Adi & Fathoni, 2020). Today's developing communication technology has made it possible for humans to connect with each other without being limited by time, space, and time (Kuswoyo & Hiskya, 2021)

Physical exercise and physical education are closely related. Learning motion to acquire a skill is one of the physical tasks that students engage in. The biological, physiological, psychological, and social benefits of physical education and sports are connected to the idea of balanced and integrated personality development (Jeong & So, 2020). From this claim, it is clear that one of physical education's goals is to help students learn through movement. Motion is a skill that must be learned in stages to be mastered. Montero-Carretero & Cervelló (2020) also mentioned the cognitive learning stage, the associative learning stage, and the autonomous learning stage as the three stages of learning. The mastery of motions signals the transition from the associative stage to the autonomous stage, which can be understood to signify the same thing as the automation stage.

It is known that the stages of learning motion begin with the cognitive stage so this cognitive stage can be the beginning or foundation of success in learning motion. If the process at the cognitive stage is carried out properly, the best results will be obtained and vice versa. So at this stage educators must really facilitate students to obtain knowledge and information that students can understand (Raibowo & Nopiyanto, 2020). As stated, learning and understanding need to be deepened through the development of cognitive skills to enable the processing of knowledge and its practical application (Ortelli et al., 2021).

Students with a visual learning style prefer to learn by seeing. This means that they have good visual memory and prefer information to be presented visually, in the form of diagrams, graphs, maps, posters, and displays. Seeing student learning styles like this, educators must be able to provide learning facilities that suit the visual student learning style (El-Sabagh, 2021). The auditory learning style describes people who learn best when initially listening to verbal instructions such as lectures, discussions, or recordings. Thus, educators can provide learning facilities in which students obtain information in the form of sound (Childs-Kean et al., 2020). The kinesthetic learning style learns through touch and experience which emphasizes doing, physical involvement, and object manipulation. For students with this kinesthetic learning style, educators can provide learning in the form of direct experience or practice (Dwiyoogo & Rodriguez, 2020).

The learning process Physical education is more suitable for using kinesthetic learning styles, but students still need to be involved in several learning styles, for example, sports instructions and games can also be in written form or provided in the form of hearing (Bostanci, 2020). For kinesthetic students this can also be a problem, they will learn more effectively if given a demonstration and will learn from the experience of participating in these activities. Canpolat (2019) The statement conveyed the intention that not all kinesthetic learning styles are in accordance with physical education learning. It is possible that there are some students who learn by using visual or auditory learning styles. Considering the diversity of student learning styles, it is expected that education is capable. create a learning atmosphere that affects the visual student learning style, auditory student learning style, and kinesthetic student learning style.

Students in the Physical Education Study Program who attend Field Tennis lectures carry out learning by utilizing learning resources that support their visual and auditory learning styles. They usually do it outside of class hours which can later be used as a provision for a face-to-face learning process by utilizing kinesthetic learning styles. However, the problem is in the cognitive learning process. Among these problems is the limited time of lectures. If the lecturer delivers extensive information and provides motivation to students, it will take a lot of

time. Not to mention that every student has different mental levels and characteristics (Utama et al., 2023). Thus, the treatment carried out by the lecturer to provide motivation and mental reinforcement will be different for each student (Meizy et al., 2022). If lecture meetings spend a lot of time conveying information and knowledge and providing motivation, then learning in these meetings will be ineffective and inefficient (Johannessen, 2018). Therefore, additional student study time is needed anywhere and anytime time without having to wait for the scheduled lecture time. Mobile learning allows a student to carry out learning by accessing the material according to their needs (Al-Qatawneh et al., 2022).

Materials and methods

Two cycles, cycle 1 and cycle 2, of classroom action research were employed as the research methodology. This study used a collaborative planning, implementation, observation, and reflection process to enhance tennis learning outcomes.

Study participants.

The 35 participants in this study were all seventh-semester students who attended tennis lectures. From March 2023 to May 2023, this study was carried out.

Study organization.

Planning, doing, observing, and reflecting were the research methods used in this study.

1. Organizing

At this point, the study program coordinator-approved semester learning plan (RPS) was included in the learning design the researcher had developed.

2. Action 2

As a means of communication and information sharing, the learning process was not only conducted in face-to-face sessions but also online via the Thinkable program, WhatsApp groups, and Zoom meetings. The lecture materials for discussing and assessing the materials are contained in the thinkable application. The day before face-to-face instruction began, students used this thinkable application to access the information at any time and anywhere to independently study it.

3. Observation

Researchers went through these steps in order to monitor each implementation incident. Each face-to-face meeting included observation exercises utilizing observation sheets to assess the improvement in student learning outcomes.

4. Introspection

In order to get to this point, where contemplation and discussion with colleagues were taking place, the researcher went through a number of stages. The conversation covered the action's triumphs, setbacks, and challenges. The collected data were then chosen as needed and utilized as a guide when creating a study report. The next stage for researchers was to reorganize the activity plan in order to get good results in the second cycle after gaining an overview of the issues and limitations discovered in cycle 1.

Statistical analysis.

This classroom action research project employed observational criteria to gather data on the results of learning tennis. Using the following formula to determine the typical student learning outcomes:

$$\bar{x} = \frac{\sum x}{\sum N}$$

Calculating student completeness with the following formula:

$$\frac{\text{Students who completed}}{\text{Total of students}} \times 100\%$$

Results

Two cycles of five sessions each were used to perform the research. Cycle 1 took place from March 2-3, 2023, and Cycle 2 from April 3–May 4, 2023. The primary aspect of this study's observation was the lecturer or teacher's action-giving procedure (Mustopa & Bagus Endrawan, 2022). Student learning outcomes in the learning process using mobile learning could be observed through indicators on historical material and tennis court facilities and infrastructure, basic concepts of techniques tennis, the concept of material for tennis rules, the concept of refereeing a tennis court, the concept of how to fill out a tennis scoresheet. The results of each indicator in each cycle can be seen in Table 1 below

Table 1. The Results of Research

Indicators	Cycle 1	Cycle 2
Historical, facilities and infrastructure tennis	80	85
Basic technique tennis	72	78
Rules of tennis	75	85
Tennis referee	76	80
Tennis scoresheet	74	85
Completed	24	33
Not Finished	11	2
Student completeness	69%	94%

Based on Table 1 it can be seen that in cycle 1 the learning outcomes on historical indicators and tennis infrastructure facilities have a score of 80, the basic technique of tennis has a score of 72, the rules of tennis have a score of 75, the refereeing of tennis has a score of 76, the scoresheet of tennis has a score 74, and student completeness is known that in cycle 1, 69% of students complete.

Based on Table 1, it can be seen that in cycle 2 there was an increase in each indicator. On the indicators of tennis history and infrastructure, a score of 85 was scored, basic tennis techniques were scored 78, tennis rules were scored 85, tennis referees were scored 80, tennis score sheets were scored 85, and known student completeness. that in cycle 2 there were 94% of students who passed.

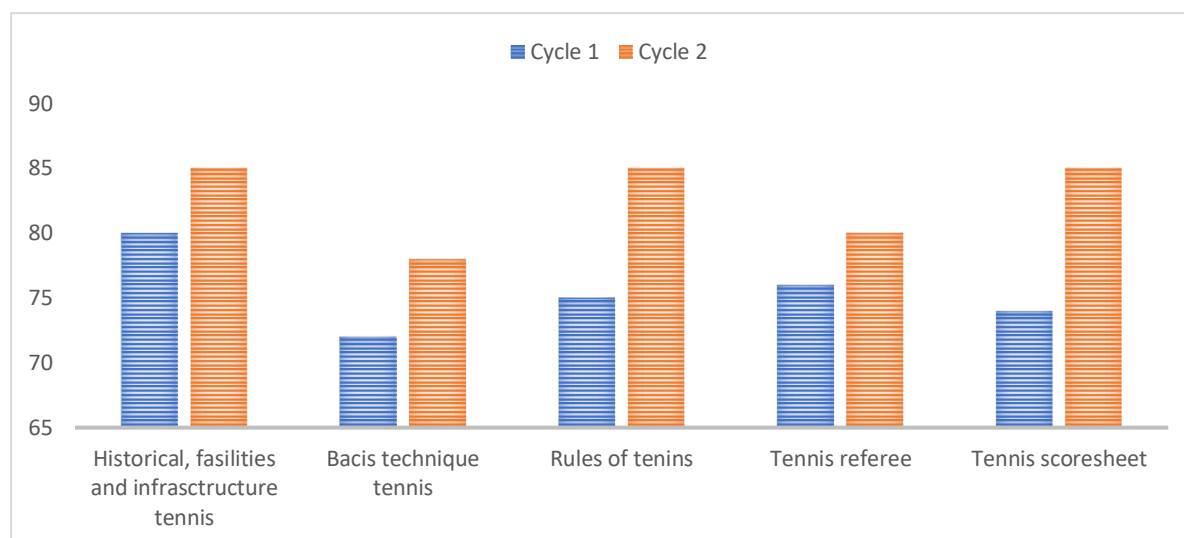


Figure 1. Graphic

Discussion

The ability to play tennis can be seen from how far the athlete has mastered the basic techniques (Jatra et al., 2023). In relation to learning, this has the same goal as learning physical education in schools, namely cognitive, affective, and psychomotor components. However, because they only concentrate on one component, these three aspects are inseparable. The results of learning tennis courts do lead to psychomotor that is more demanding to be skilled in the ability to move tennis courts. Therefore, learning phases starting with cognition, association, and automation are required to generate good psychomotor (Kasilingam et al., 2014). If the process of creating psychomotor aspects, which are supported by cognitive aspects, proceeds smoothly, cognitive aspects provide the foundation for growing psychomotor and affective aspects (Raibowo et al., 2020). One solution is to use technology in learning, namely the implementation of mobile learning, to ensure that cognitive processes develop optimally. The usage of mobile learning is meant to promote cognitive elements that are frequently utilized to expand knowledge and support autonomous learning for students who have not received much support up until now.

Utilization of learning media through mobile learning in the teaching process will be able to generate new desires and interests and provide psychological stimulation to students (Elmi et al., 2023; Sumekto et al., 2019). Using mobile learning can support a fun and interesting learning process for students so that boredom (Rosmaidah et al., 2021) in class can be minimized. This situation is very clearly seen from the attitude of students who were quite good at participating in learning tennis courses. This situation proves that the use of mobile learning can increase interest and motivation to learn (Al-Said, 2023) which will ultimately affect learning outcomes. Learning media such as mobile learning, if designed or developed properly, will produce learning outcomes. In line with research (Baharum et al., 2020) the use of mobile learning in learning is more effective than conventional learning because mobile learning is a learning medium that has a constructivist learning theory approach (Yakar et al., 2020).

In line with the results of the study interpreting that the average student completeness experienced an increase in cycle 1 of 69% and an increase of 25% in cycle 2 of 94%. The application of the results of this study is that an educator should be able to know the type of learning style of each student so that he can choose the right learning model to increase the participation and thinking skills of students so that it can affect learning outcomes (Raiyn, 2016; Rogowsky et al., 2020; Syofyan & Siwi, 2018).

The learning atmosphere becomes dynamic because learning resources can be accessed anytime and anywhere (Nopiyanto et al., 2021; Saifuddin et al., 2018). The inclusion of mobile learning-based teaching materials in the learning process is one way to improve the relationship between teachers, educational resources, and students. The same thing was also expressed by (Berie et al., 2022) to fulfill curriculum objectives established by the availability of teaching resources that serve as the most convenient information source for students to put what they have learned into practice. The more choices of available learning resources will make the learning process better (Solikhin et al., 2022). In addition to serving as a learning medium, technology-integrated teaching materials are also used as learning resources to encourage the transition from abstract to concrete learning that can be seen in action. Students will find it easier to learn concrete concepts than abstract ones (Pratiwi et al., 2021).

Conclusions

This study concludes that the application of mobile learning-based learning could improve student learning outcomes in learning tennis. Mobile learning in this study was a thinkable application that could only be accessed on the internet network. It is recommended that further research develop tennis learning materials that can be accessed online or offline.

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Conflict of interest

All authors declare that there is no conflict of interest whatsoever in this research.

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Information about the authors:

Yahya Eko Nopiyanto, S.Pd., M.Pd : yahyaekonopiyanto@unib.ac.id, <https://orcid.org/0000-0003-2920-0594>, Department Of Physical Education, Universitas Bengkulu, Indonesia

Drs. Tono Sugihartono, M.Pd: tonosugiartono@unib.ac.id, <https://orcid.org/0009-0000-5161-2777>, Department Of Physical Education, Universitas Bengkulu, Indonesia.

Andes Permadi, S.Pd., M.Pd: andespermadi@unib.ac.id, <https://orcid.org/0000-0001-7943-8985>, Department Of Physical Education, Universitas Bengkulu, Indonesia.

Dr. Dian Pujiyanto, S.Pd Jas, M.Or: dianpujiyanto@unib.ac.id, <https://orcid.org/0000-0001-8653-1010>, Department Of Physical Education, Universitas Bengkulu, Indonesia.

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